

REMARKS

This is in response to the Office Action mailed on March 22, 2007. In the Office Action, (i) claims 6-14, 20, 23-25, and 28 were objected to, and (ii) claims 1-5, 15-19, 21, 22, 26 and 27 have been rejected were rejected under 35 U.S.C. §103(a). Reconsideration of the rejections is respectfully requested in view of the following remarks.

Original claims 1-28 are pending in the patent application. No claims have been amended, added or deleted by this response. No new matter has been added by this response.

Applicants traverse these rejections as follows.

I) CLAIM OBJECTIONS

The Office Action objected to claims 6-14, 20, 23-25, and 28 as being dependent upon rejected base claims, but which would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims. Applicants thank the Examiner for notice of allowability for claims 6-14, 20, 23-25, and 28, but have elected not to rewrite the claims in independent form at this time because Applicants believe the rejection of the base claims on which each of the above claims depend on is traversed based on the following remarks.

II) CLAIM REJECTIONS UNDER 35 U.S.C. § 103(a)

In the Office Action, claims 1-5, 15-19, 21, 22, 26 and 27 were rejected under 35 U.S.C. §103(a). Specifically: (a) claims 1, 21 and 26 were rejected as being unpatentable over U.S. Patent No. 5,825,459 issued to Farrow et al ("Farrow") in view of U.S. Patent No. 5,444,864 issued to Smith ("Smith"); (b) claims 2-4 were rejected as being unpatentable over Farrow in view of Smith and further in view of U.S. Publication 2004/0219884 to Mo ("Mo"); (c) claims 5, 15, 22, and 27 were rejected as being unpatentable over Farrow in view of Smith and further in view of U.S. Patent No. 5,526,377 issued to Yedid ("Yedid"); (d) claim 16 was rejected as being unpatentable over Farrow in view of Smith and further in view of U.S. Patent No. 6,640,111 issued to Shapiro

("Shapiro"); (e) claims 17-18 were rejected as being unpatentable over Mo in view of Smith; and (f) claim 19 was rejected as being unpatentable over Mo in view of Smith and further in view Yedid.

To establish a *prima facie* case of obviousness the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *see also* MPEP § 2143.03. Additionally, there must be “a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742, 167 L.Ed.2d 705, 75 USLW 4289, 82 U.S.P.Q.2d 1385 (2007). Finally, to establish a *prima facie* case of obviousness there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Furthermore, the reason that would have prompted the combination and the reasonable expectation of success must be found in the prior art, common knowledge, or the nature of the problem itself, and not based on the Applicant’s disclosure. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006); MPEP § 2144. Underlying the obvious determination is the fact that statutorily prohibited hindsight cannot be used. *KSR*, 127 S.Ct. at 1742; *DyStar*, 464 F.3d at 1367.

Applicants respectfully traverse the above rejections and contend that the burden of establishing a *prima facie* case of obviousness has not been met for each of the claims 1-5, 15-19, 21, 22, 26 and 27.

Claim 1:

Independent claim 1 reads in part:

An integrated circuit comprising:

a summer operative to.... **provide an output signal** having the transmit leakage signal attenuated.....; and

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an estimator operative **to receive the output signal** and a reference signal having a version of the modulated signal, to estimate the transmit leakage signal in the input signal

based on the output signal and the reference signal, and to provide the estimator signal having the estimate of the transmit leakage signal. (Emphasis added).

The Office Action correctly states that Farrow does not explicitly show an estimator operative **to receive the output signal** and a reference signal having a version of the modulated signal, to estimate the transmit leakage signal in the input signal based on the output signal and the reference signal, and to provide the estimator signal having the estimate of the transmit leakage signal, but that this feature is taught by Smith. (Office Action, page 3). Applicants respectfully disagree.

The claimed invention discloses an adaptive filter for transmission leakage signal rejection which provides an output from a summer to an estimator in a feedback configuration (See for example, figures 5 and 6 and accompanying description starting on page 7 paragraph [0035]). The output from the summer therefore provides a feedback to the estimator.

In this regard, it was stated in the Office Action that Col 2, lines 41-62 of Smith discloses the foregoing features of claim 1 (Office Action, page 3). Applicants have reviewed the cited portions and the entirety of Smith and have found no mention of the above features of Applicants' invention as claimed in independent claim 1. Smith discloses a method for canceling in-band energy leakage from transmitter to receiver. As shown in Fig 1 of Smith, the output of the summer 38 is received only in the signal receiver 16, and is not provided in feedback to the signal canceller 12. The signal 34 that is received in the signal canceller 12 is the input to the summer 38, and not the output. Therefore, Smith does not disclose a summer operative to.... **provide an output signal** having the transmit leakage signal attenuated.....; and an estimator operative **to receive the output signal** and a reference signal having a version of the modulated signal, to estimate the transmit leakage signal in the input signal based on the output signal and the reference signal, and to provide the estimator signal having the estimate of the transmit leakage signal, as claimed in independent claim 1.

Thus Farrow and Smith, taken alone or in any combination, do not disclose, suggest, or render obvious the foregoing features of claim 1. Therefore, Applicants respectfully submit that Farrow and Smith do not render claim 1 obvious.

Claims 2-4, 5, 15, and 16

Dependent claims 2-4, 5, 15, and 16 were rejected under 35 U.S.C. §103(a). Specifically, claims 2-4 were rejected as being unpatentable over Farrow in view of Smith. (Office Action, page 6); claim 15 was rejected as being unpatentable over Farrow in view of Smith and further in view of Yedid. (Office Action, page 7); and claim 16 was rejected as being unpatentable in view of Shapiro. (Office Action, page 8).

Applicants respectfully traverse these 35 U.S.C. §103(a) rejections and contend a prima facie case of obviousness has not been established.

Dependent claims 2-4, 5, 15, and 16 directly depend from independent claim 1, and thus include all the limitations of independent claim 1 described previously, as well as reciting additional features. Therefore, for at least the above-stated reasons with regard to independent claim 1 Applicants submit that each of dependent claims 2-4, 5, 15, and 16 are patentably distinguished over the cited prior art.

For at least the foregoing reasons, Applicants respectfully request the withdrawal of the outstanding 35 U.S.C. §103(a) rejections of claims 2-4, 5, 15, and 16.

Claims 21 and 26:

Independent claims 21 and 26 are means-plus-function and method claims, respectively, that share the novel features of claim 1. Therefore, for at least the reasons stated above in conjunction with claim 1, Farrow and Smith, taken alone or in any combination, do not disclose, suggest, or render obvious the foregoing features of claims 21 and 26. Therefore, Applicants respectfully submit that Farrow and Smith do not render claims 21 and 26 obvious.

Claims 22 and 27

Dependent claims 22 and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Farrow in view of Smith and further in view of Yedid. (Office Action, page 8).

Applicants respectfully traverse these 35 U.S.C. §103(a) rejections and contend a prima facie case of obviousness has not been established.

Dependent claims 22 and 27 directly depend from independent claims 21 and 26 respectively, and thus include all the limitations of their respective independent claims described previously, as well as reciting additional features. Therefore, for at least the above-stated reasons with regard to independent claims 21 and 26 Applicants submit that each of dependent claims 22 and 27 are patentably distinguished over the cited prior art.

For at least the foregoing reasons, Applicants respectfully request the withdrawal of the outstanding 35 U.S.C. §103(a) rejections of claims 22 and 27.

Claim 17:

Independent claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Mo in view of Smith. Mo is directed to measuring receiver I/Q mismatch. Neither Mo or Smith show, alone or in combination teach or suggest an output signal out of a summer that is sent into an estimator to estimate the transmit leakage signal. Applicants respectfully traverse the rejection and requests that claim 17 be allowed.

Claims 18-19

Dependent claims 18-19 were rejected under 35 U.S.C. §103(a). Specifically, claim 18 was rejected as being unpatentable over Mo in view of Smith. (Office Action, page 9); claim 19 was rejected as being unpatentable over Mo in view of Smith and further in view of Yedid. (Office Action, page 10).

Applicants respectfully traverse these 35 U.S.C. §103(a) rejections and contend a prima facie case of obviousness has not been established.

Dependent claims 18-19 directly depend from independent claim 17, and thus include all the limitations of independent claim 17 described previously, as well as reciting additional features. Therefore, for at least the above-stated reasons with regard to independent claim 17 Applicants submit that each of dependent claims 18-19 are patentably distinguished over the cited prior art.

For at least the foregoing reasons, Applicants respectfully request the withdrawal of the outstanding 35 U.S.C. §103(a) rejections of claims 18-19.

CONCLUSION

In view of the foregoing it is respectfully submitted that the pending claims 1-28 are in condition for allowance. Reconsideration of the rejections and objections is requested. Allowance of the claims at an early date is solicited.

The Examiner is invited to contact Applicants' undersigned counsel by telephone at (858) 658-2447 to expedite the prosecution of this case should there be any unresolved matters remaining.

Respectfully submitted,

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